US 20100104504A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2010/0104504 A1**

(43) **Pub. Date: Apr. 29, 2010**

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(54) **MATERIALS AND METHODS FOR DIAGNOSIS, PREVENTION AND/OR TREATMENT OF STRESS DISORDERS AND CONDITIONS ASSOCIATED WITH ABETA PEPTIDE AGGREGATION**

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(21) Appl. No.: **12/586,681**

(22) Filed: **Sep. 24, 2009**

Related U.S. Application Data

(60) Provisional application No. 61/194,064, filed on Sep. 24, 2008, provisional application No. 61/099,746, filed on Sep. 24, 2008.

Publication Classification

(51) **Int. Cl.**

A61K 51/00	(2006.01)
A61K 31/4439	(2006.01)
A61P 25/28	(2006.01)
A61P 25/26	(2006.01)
C07D 401/00	(2006.01)

(52) **U.S. Cl.** **424/1.11**; 514/343; 424/1.81; 546/278.4

(57) **ABSTRACT**

The subject invention concerns materials and methods for treating and/or preventing diseases associated with accumulation of Aβ peptide in neural tissue. The subject invention also concerns materials and methods for treating and/or preventing stress disorders, such as post-traumatic stress disorder (PTSD). In one embodiment, a method of the invention comprises administering a therapeutically effective amount of cotinine, or a pharmaceutically acceptable salt thereof, to a person or animal in need of treatment. The methods of the invention can be used to prevent and/or treat Alzheimer's disease, Parkinson's disease, and/or Down's syndrome. The subject invention also concerns compositions that comprise cotinine, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier, diluent or adjuvant.

The subject invention concerns materials and methods for detecting and diagnosing conditions associated with accumulation of Aβ peptide in neural tissue, such as Alzheimer's disease and Parkinson's disease, using the chemical cotinine. In one embodiment, the method comprises administering cotinine labeled with a detectable label to a person or animal. The presence of labeled cotinine in neural tissue is then determined. The level and/or location of cotinine can be analyzed and a diagnosis made. The subject invention also concerns cotinine labeled with a detectable label. In one embodiment, the cotinine is labeled with a radioisotope that can be detected by Positron Emission Tomography (PET) or single photon emission computed tomography (SPECT).